

109TH CONGRESS  
1ST SESSION

# S. 1281

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## AN ACT

To authorize appropriations for the National Aeronautics and Space Administration for science, aeronautics, exploration, exploration capabilities, and the Inspector General, and for other purposes, for fiscal years 2006, 2007, 2008, 2009, and 2010.

1       *Be it enacted by the Senate and House of Representa-*  
2       *tives of the United States of America in Congress assembled,*

3       **SECTION 1. SHORT TITLE; TABLE OF CONTENTS.**

4       (a) SHORT TITLE.—This Act may be cited as “Na-  
5       tional Aeronautics and Space Administration Authoriza-  
6       tion Act of 2005”.

- 1 (b) TABLE OF CONTENTS.—The table of contents for  
 2 this Act is as follows:

Sec. 1. Short title; table of contents.  
 Sec. 2. Findings.  
 Sec. 3. Definitions.

#### TITLE I—AUTHORIZATION OF APPROPRIATIONS

##### SUBTITLE A—AUTHORIZATIONS

Sec. 101. Fiscal year 2006.  
 Sec. 102. Fiscal year 2007.  
 Sec. 103. Fiscal year 2008.  
 Sec. 104. Fiscal year 2009.  
 Sec. 105. Fiscal year 2010.  
 Sec. 106. Evaluation criteria for budget request.

##### SUBTITLE B—GENERAL PROVISIONS

Sec. 131. Implementation of a science program that extends human knowledge and understanding of the Earth, sun, solar system, and the universe.  
 Sec. 132. Biennial reports to Congress on science programs.  
 Sec. 133. Status report on Hubble Space Telescope servicing mission.  
 Sec. 134. Develop expanded permanent human presence beyond low-Earth orbit.  
 Sec. 135. Ground-based analog capabilities.  
 Sec. 136. Space launch and transportation transition, capabilities, and development.  
 Sec. 137. Lessons learned and best practices.  
 Sec. 138. Safety management.  
 Sec. 139. Creation of a budget structure that aids effective oversight and management.  
 Sec. 140. Earth observing system.  
 Sec. 141. NASA healthcare program.  
 Sec. 142. Assessment of extension of data collection from Ulysses and Voyager spacecraft.  
 Sec. 143. Program to expand distance learning in rural underserved areas.  
 Sec. 144. Institutions in NASA'S minority institutions program.  
 Sec. 145. Aviation safety program.  
 Sec. 146. Atmospheric, geophysical, and rocket research authorization.  
 Sec. 147. Orbital debris.  
 Sec. 148. Continuation of certain educational programs.  
 Sec. 149. Establishment of the Charles “Pete” Conrad Astronomy Awards Program.  
 Sec. 150. GAO assessment of feasibility of Moon and Mars exploration missions.  
 Sec. 151. Workforce.  
 Sec. 152. Major research equipment and facilities.  
 Sec. 153. Data on specific fields of study.

##### SUBTITLE C—LIMITATIONS AND SPECIAL AUTHORITY

Sec. 161. Official representational fund.

Sec. 162. Facilities management.

#### TITLE II—INTERNATIONAL SPACE STATION

- Sec. 201. International Space Station completion.
- Sec. 202. Research and support capabilities on international Space Station.
- Sec. 203. National laboratory status for International Space Station.
- Sec. 204. Commercial support of International Space Station operations and utilization.
- Sec. 205. Use of the International Space Station and annual report.

#### TITLE III—NATIONAL SPACE TRANSPORTATION POLICY

- Sec. 301. United States human-rated launch capacity assessment.
- Sec. 302. Space Shuttle transition.
- Sec. 303. Commercial launch vehicles.
- Sec. 304. Secondary payload capability.
- Sec. 305. Power and propulsion reporting.
- Sec. 306. Utilization of NASA field centers and workforce.

#### TITLE IV—ENABLING COMMERCIAL ACTIVITY

- Sec. 401. Commercialization plan.
- Sec. 402. Commercial technology transfer program.
- Sec. 403. Authority for competitive prize program to encourage development of advanced space and aeronautical technologies.
- Sec. 404. Commercial goods and services.

#### TITLE V—AERONAUTICS RESEARCH AND DEVELOPMENT

- Sec. 501. Governmental interest in aeronautics.
- Sec. 502. National policy for aeronautics research and development.
- Sec. 503. High priority aeronautics research and development programs.
- Sec. 504. Test facilities.
- Sec. 505. Miscellaneous provisions.

#### TITLE VI—MISCELLANEOUS ADMINISTRATIVE IMPROVEMENTS.

- Sec. 601. Extension of indemnification authority.
- Sec. 602. Intellectual property provisions.
- Sec. 603. Retrocession of jurisdiction.
- Sec. 604. Recovery and disposition authority.
- Sec. 605. Requirement for independent cost analysis.
- Sec. 606. Electronic access to business opportunities.
- Sec. 607. Reports elimination.
- Sec. 608. Small business contracting.
- Sec. 609. Government accountability office review and report.

### 1 **SEC. 2. FINDINGS.**

2       The Congress finds the following:

- 3           (1) It is the policy of the United States to ad-
- 4       vance United States scientific, security, and eco-

1        nomic interests through a healthy and active space  
2        exploration program.

3            (2) Basic and applied research in space science,  
4        Earth science, and aeronautics remain a significant  
5        part of the Nation's goals for the use and develop-  
6        ment of space. Basic research and development is an  
7        important component of NASA's program of explo-  
8        ration and discovery.

9            (3) Maintaining the capability to safely send  
10        humans into space is essential to United States na-  
11        tional and economic security, United States pre-  
12        eminence in space, and inspiring the next generation  
13        of explorers. Thus, a gap in United States human  
14        space flight capability is harmful to the national in-  
15        terest.

16            (4) The exploration, development, and perma-  
17        nent habitation of the Moon will inspire the Nation,  
18        spur commerce, imagination, and excitement around  
19        the world, and open the possibility of further explo-  
20        ration of Mars. NASA should return to the Moon  
21        within the next decade.

22            (5) The establishment of the capability for con-  
23        sistent access to and stewardship of the region be-  
24        tween the Moon and Earth is in the national secu-  
25        rity and commercial interests of the United States.

1           (6) Commercial development of space, including  
2           exploration and other lawful uses, is in the interest  
3           of the United States and the international commu-  
4           nity at large.

5           (7) Research and access to capabilities to sup-  
6           port a national laboratory facility within the United  
7           States segment of the ISS in low-Earth orbit are in  
8           the national policy interests of the United States, in-  
9           cluding maintenance and development of an active  
10          and healthy stream of research from ground to space  
11          in areas that can uniquely benefit from access to  
12          this facility.

13          (8) NASA should develop vehicles to replace the  
14          Shuttle orbiter's capabilities for transporting crew  
15          and heavy cargo while utilizing the current pro-  
16          gram's resources, including human capital, capabili-  
17          ties, and infrastructure. Using these resources can  
18          ease the transition to a new space transportation  
19          system, maintain an essential industrial base, and  
20          minimize technology and safety risks.

21          (9) The United States must remain the leader  
22          in aeronautics and aviation. Any erosion of this pre-  
23          eminence is not in the Nation's economic or security  
24          interest. NASA should align its aerospace leadership  
25          to ensure United States leadership. A national effort

1 is needed to ensure that NASA's aeronautics pro-  
 2 grams are leading contributors to the Nation's civil  
 3 and military aviation needs, as well as to its explo-  
 4 ration capabilities.

5 **SEC. 3. DEFINITIONS.**

6 In this Act:

7 (1) ADMINISTRATOR.—The term “Adminis-  
 8 trator” means the Administrator of the National  
 9 Aeronautics and Space Administration.

10 (2) ISS.—The term “ISS” means the Inter-  
 11 national Space Station.

12 (3) NASA.—The term “NASA” means the Na-  
 13 tional Aeronautics and Space Administration.

14 (4) SHUTTLE-DERIVED VEHICLE.—The term  
 15 “shuttle-derived vehicle” means any new space  
 16 transportation vehicle, piloted or unpiloted, that—

17 (A) is capable of supporting crew or cargo  
 18 missions; and

19 (B) uses a major component of NASA's  
 20 Space Transportation System, such as the solid  
 21 rocket booster, external tank, engine, and or-  
 22 biter.

23 (5) IN-SITU RESOURCE UTILIZATION.—The  
 24 term “in-situ resource utilization” means the tech-  
 25 nology or systems that can convert indigenous or lo-

1 cally-situated substances into useful materials and  
 2 products.

3 **TITLE I—AUTHORIZATION OF**  
 4 **APPROPRIATIONS**  
 5 **Subtitle A—Authorizations**

6 **SEC. 101. FISCAL YEAR 2006.**

7 There are authorized to be appropriated to the Na-  
 8 tional Aeronautics and Space Administration, for fiscal  
 9 year 2006, \$16,556,400,000, as follows:

10 (1) For science, aeronautics and exploration,  
 11 \$9,661,000,000 for the following programs (includ-  
 12 ing amounts for construction of facilities).

13 (2) For exploration capabilities,  
 14 \$6,863,000,000, (including amounts for construction  
 15 of facilities), which shall be used for space oper-  
 16 ations, and out of which \$100,000,000 shall be used  
 17 for the purposes of section 202 of this Act.

18 (3) For the Office of Inspector General,  
 19 \$32,400,000.

20 **SEC. 102. FISCAL YEAR 2007.**

21 There are authorized to be appropriated to the Na-  
 22 tional Aeronautics and Space Administration, for fiscal  
 23 year 2007, \$17,052,900,000, as follows:

1           (1) \$10,549,800,000 for science, aeronautics  
2           and exploration (including amounts for construction  
3           of facilities).

4           (2)       For       exploration       capabilities,  
5           \$6,469,600,000, for the following programs (includ-  
6           ing amounts for construction of facilities), of which  
7           \$6,469,600,000 shall be for space operations.

8           (3) For the Office of Inspector General,  
9           \$33,500,000.

10 **SEC. 103. FISCAL YEAR 2008.**

11       There are authorized to be appropriated to the Na-  
12       tional Aeronautics and Space Administration, for fiscal  
13       year 2008, \$17,470,900,000.

14 **SEC. 104. FISCAL YEAR 2009.**

15       There are authorized to be appropriated to the Na-  
16       tional Aeronautics and Space Administration, for fiscal  
17       year 2009, \$17,995,000,000.

18 **SEC. 105. FISCAL YEAR 2010.**

19       There are authorized to be appropriated to the Na-  
20       tional Aeronautics and Space Administration, for fiscal  
21       year 2010, \$18,534,900,000.

22 **SEC. 106. EVALUATION CRITERIA FOR BUDGET REQUEST.**

23       It is the sense of the Congress that each budget of  
24       the United States submitted to the Congress after the date  
25       of enactment of this Act should be evaluated for compli-



1 ance with the findings and priorities established by this  
 2 Act and the amendments made by this Act.

### 3 **Subtitle B—General Provisions**

#### 4 **SEC. 131. IMPLEMENTATION OF A SCIENCE PROGRAM THAT** 5 **EXTENDS HUMAN KNOWLEDGE AND UNDER-** 6 **STANDING OF THE EARTH, SUN, SOLAR SYS-** 7 **TEM, AND THE UNIVERSE.**

8 The Administrator shall—

9 (1) conduct a rich and vigorous set of science  
 10 activities aimed at better comprehension of the uni-  
 11 verse, solar system, and Earth, and ensure that the  
 12 various areas within NASA’s science portfolio are  
 13 developed and maintained in a balanced and healthy  
 14 manner, and, as part of this balanced science re-  
 15 search program, provide, to the maximum extent  
 16 feasible, continued support and funding for the  
 17 Magnetospheric Multiscale Mission, SIM-Planet  
 18 Quest, and Future Explorers programs, including  
 19 determining whether these delayed missions and  
 20 planned missions can be expedited to meet previous  
 21 schedules, and may place a greater emphasis on  
 22 science, including the programs described in this  
 23 paragraph, throughout the fiscal years for which  
 24 funds are authorized by this Act (and for this pur-  
 25 pose, of the funds authorized by section 101(1) of

1       this Act, no less than \$5,341,200,000 shall be for  
2       science, and of the funds authorized by section  
3       102(1) of this Act, no less than \$5,960,300,000  
4       shall be for science);

5           (2) plan projected Mars exploration activities in  
6       the context of planned lunar robotic precursor mis-  
7       sions, ensuring the ability to conduct a broad set of  
8       scientific investigations and research around and on  
9       the Moon's surface;

10          (3) upon successful completion of the planned  
11       return-to-flight schedule of the Space Shuttle, deter-  
12       mine the schedule for a Shuttle servicing mission to  
13       the Hubble Space Telescope, unless such a mission  
14       would compromise astronaut or safety or the integ-  
15       rity of NASA's other missions;

16          (4) ensure that, in implementing the provisions  
17       of this section, appropriate inter-agency and com-  
18       mercial collaboration opportunities are sought and  
19       utilized to the maximum feasible extent;

20          (5) seek opportunities to diversify the flight op-  
21       portunities for scientific Earth science instruments  
22       and seek innovation in the development of instru-  
23       ments that would enable greater flight opportunities;

24          (6) develop a long term sustainable relationship  
25       with the United States commercial remote sensing

1 industry, and, consistent with applicable policies and  
2 law, to the maximum practical extent, rely on their  
3 services;

4 (7) in conjunction with United States industry  
5 and universities, develop Earth science applications  
6 to enhance Federal, State, local, and tribal govern-  
7 ments that use government and commercial remote  
8 sensing capabilities and other sources of geospatial  
9 information to address their needs;

10 (8) plan, develop, and implement a near-Earth  
11 object survey program to detect, track, catalogue,  
12 and characterize the physical characteristics of near-  
13 Earth asteroids and comets in order to assess the  
14 threat of such near-Earth objects in impacting the  
15 Earth; and

16 (9) ensure that, of the amount expended for  
17 aeronautics, a significant portion is directed toward  
18 the Vehicle System Program, as much of the basic,  
19 long-term, high-risk, and innovative research in  
20 aeronautical disciplines is performed within that pro-  
21 gram.

22 **SEC. 132. BIENNIAL REPORTS TO CONGRESS ON SCIENCE**  
23 **PROGRAMS.**

24 (a) IN GENERAL.—Within 180 days after the date  
25 of enactment of this Act and every 2 years thereafter, the

1 Administrator shall transmit a report to the Senate Com-  
 2 mittee on Commerce, Science, and Transportation and the  
 3 House of Representatives Committee on Science setting  
 4 forth in detail—

5           (1) the findings and actions taken on NASA’s  
 6           assessment of the balance within its science portfolio  
 7           and any efforts to adjust that balance among the  
 8           major program areas, including the areas referred to  
 9           in section 131;

10           (2) any activities undertaken by the Adminis-  
 11           tration to conform with the Sun-Earth science and  
 12           applications direction provided in section 131; and

13           (3) efforts to enhance near-Earth object detec-  
 14           tion and observation.

15           (b) **EXTERNAL REVIEW FINDINGS.**—The Adminis-  
 16           trator shall include in each report submitted under this  
 17           section a summary of findings and recommendations from  
 18           any external reviews of the Administration’s science mis-  
 19           sion priorities and programs.

20 **SEC. 133. STATUS REPORT ON HUBBLE SPACE TELESCOPE**  
 21 **SERVICING MISSION.**

22           Within 60 days after the landing of the second Space  
 23           Shuttle mission for return-to-flight certification, the Ad-  
 24           ministrator shall transmit to the Senate Committee on  
 25           Commerce, Science, and Transportation and the House of

1 Representatives Committee on Science a one-time status  
 2 report on a Hubble Space Telescope servicing mission.

3 **SEC. 134. DEVELOP EXPANDED PERMANENT HUMAN PRES-**  
 4 **ENCE BEYOND LOW-EARTH ORBIT.**

5 (a) IN GENERAL.—As part of the programs author-  
 6 ized under the National Aeronautics and Space Act of  
 7 1958 (42 U.S.C. 2451 et seq.), the Administrator shall  
 8 establish a program to develop a permanently sustained  
 9 human presence on the Moon, in tandem with an extensive  
 10 precursor program, to support security, commerce, and  
 11 scientific pursuits, and as a stepping-stone to future explo-  
 12 ration of Mars. The Administrator is further authorized  
 13 to develop and conduct international collaborations in pur-  
 14 suit of these goals, as appropriate.

15 (b) REQUIREMENTS.—In carrying out this section,  
 16 the Administrator shall—

17 (1) implement an effective exploration tech-  
 18 nology program that is focused around the key needs  
 19 to support lunar human and robotic operations;

20 (2) as part of NASA’s annual budget submis-  
 21 sion, submit to the Congress the detailed mission,  
 22 schedule, and budget for key lunar mission-enabling  
 23 technology areas, including areas for possible innova-  
 24 tive governmental and commercial activities and  
 25 partnerships;

1           (3) as part of NASA’s annual budget submis-  
2           sion, submit to the Congress a plan for NASA’s  
3           lunar robotic precursor and technology programs, in-  
4           cluding current and planned technology investments  
5           and scientific research that support the lunar pro-  
6           gram;

7           (4) conduct an intensive in-situ resource utiliza-  
8           tion technology program in order to develop the ca-  
9           pability to use space resources to increase independ-  
10          ence from Earth, and sustain exploration beyond  
11          low-Earth orbit;

12          (5) conduct a program to assure the health and  
13          safety of astronauts during extended space explo-  
14          ration missions which include more effective counter-  
15          measures to mitigate deleterious effects of such mis-  
16          sions, and the means to provide in-space exploration  
17          medical care delivery to crews with little or no real-  
18          time support from Earth, relevant issues such as ra-  
19          diation exposure, exercise countermeasures, cardiac  
20          health, diagnostic and monitoring devices, and med-  
21          ical imaging;

22          (6) utilize advanced power and propulsion tech-  
23          nologies, including nuclear and electric technologies,  
24          to enable or enhance robotic and human exploration  
25          missions when feasible; and

1           (7) develop a robust technology development  
 2       program to provide surface power for use on the  
 3       Moon and other locations relevant to NASA space  
 4       exploration goals which, to the extent feasible, ad-  
 5       dress needs for modular, scalable power sources for  
 6       a range of applications on the Moon including  
 7       human and vehicular uses.

8   **SEC. 135. GROUND-BASED ANALOG CAPABILITIES.**

9       (a) IN GENERAL.—The Administrator shall establish  
 10   a ground-based analog capability in remote United States  
 11   locations in order to assist in the development of lunar  
 12   operations, life support, and in-situ resource utilization ex-  
 13   perience and capabilities.

14       (b) LOCATIONS.—The Administrator shall select loca-  
 15   tions for subsection (a) in places that—

- 16           (1) are regularly accessible;
- 17           (2) have significant temperature extremes and
- 18       range; and
- 19           (3) have access to energy and natural resources
- 20       (including geothermal, permafrost, volcanic, and
- 21       other potential resources).

22       (c) INVOLVEMENT OF LOCAL POPULATIONS; PRI-  
 23   VATE SECTOR PARTNERS.—In carrying out this section,  
 24   the Administrator shall involve local populations, aca-  
 25   demia, and industrial partners as much as possible to en-

1 sure that ground-based benefits and applications are en-  
 2 couraged and developed.

3 **SEC. 136. SPACE LAUNCH AND TRANSPORTATION TRANSI-**  
 4 **TION, CAPABILITIES, AND DEVELOPMENT.**

5 (a) POST-ORBITER TRANSITION.—The Adminis-  
 6 trator shall develop an implementation plan for the transi-  
 7 tion to a new crew exploration vehicle and heavy-lift  
 8 launch vehicle that uses the personnel, capabilities, assets,  
 9 and infrastructure of the Space Shuttle to the fullest ex-  
 10 tent possible and addresses how NASA will accommodate  
 11 the docking of the crew exploration vehicle to the ISS.

12 (b) AUTOMATED RENDEZVOUS AND DOCKING.—The  
 13 Administrator is directed to pursue aggressively auto-  
 14 mated rendezvous and docking capabilities that can sup-  
 15 port ISS and other mission requirements and include  
 16 these activities, progress reports, and plans in the imple-  
 17 mentation plan.

18 (c) CONGRESSIONAL SUBMISSION.—Within 120 days  
 19 after the date of enactment of this Act the Administrator  
 20 shall submit a copy of the implementation plan to the Sen-  
 21 ate Committee on Commerce, Science, and Transportation  
 22 and the House of Representatives Committee on Science.

23 **SEC 137. LESSONS LEARNED AND BEST PRACTICES.**

24 (a) IN GENERAL.—The Administrator shall provide  
 25 an implementation plan describing NASA's approach for



1 obtaining, implementing, and sharing lessons learned and  
 2 best practices for its major programs and projects within  
 3 180 days after the date of enactment of this Act. The im-  
 4 plementation plan shall be updated and maintained to as-  
 5 sure that it is current and consistent with the burgeoning  
 6 culture of learning and safety that is emerging at NASA.

7 (b) REQUIRED CONTENT.—The implementation plan  
 8 shall contain as a minimum the lessons learned and best  
 9 practices requirements for NASA, the organizations or po-  
 10 sitions responsible for enforcement of the requirements,  
 11 the reporting structure, and the objective performance  
 12 measures indicating the effectiveness of the activity.

13 (c) INCENTIVES.—The Administrator shall provide  
 14 incentives to encourage sharing and implementation of les-  
 15 sons learned and best practices by employees, projects,  
 16 and programs; as well as penalties for programs and  
 17 projects that are determined not to have demonstrated use  
 18 of those resources.

19 **SEC. 138. SAFETY MANAGEMENT.**

20 Section 6 of the National Aeronautics and Space Ad-  
 21 ministration Authorization Act, 1968 (42 U.S.C. 2477) is  
 22 amended—

23 (1) by inserting “(a) IN GENERAL.—” before  
 24 “There”;

1           (2) by striking “to it” and inserting “to it, in-  
 2           cluding evaluating NASA’s compliance with the re-  
 3           turn-to-flight and continue-to-fly recommendations  
 4           of the Columbia Accident Investigation Board,”;

5           (3) by inserting “and the Congress” after “ad-  
 6           vise the Administrator”;

7           (4) by striking “and with respect to the ade-  
 8           quacy of proposed or existing safety standards and  
 9           shall” and inserting “with respect to the adequacy  
 10          of proposed or existing safety standards, and with  
 11          respect to management and culture. The Panel shall  
 12          also”; and

13          (5) by adding at the end the following:

14          “(b) ANNUAL REPORT.—The Panel shall submit an  
 15          annual report to the Administrator and to the Congress.  
 16          In the first annual report submitted after the date of en-  
 17          actment of the National Aeronautics and Space Adminis-  
 18          tration Authorization Act of 2005, the Panel shall include  
 19          an evaluation of NASA’s safety management culture.

20          “(c) SENSE OF THE CONGRESS.—It is the sense of  
 21          the Congress that the Administrator should—

22                 “(1) ensure that NASA employees can raise  
 23          safety concerns without fear of reprisal;

1 “(2) continue to follow the recommendations of  
 2 the Columbia Accident Investigation Board for safe-  
 3 ly returning and continuing to fly; and

4 “(3) continue to inform the Congress from time  
 5 to time of NASA’s progress in meeting those rec-  
 6 ommendations.”.

7 **SEC. 139. CREATION OF A BUDGET STRUCTURE THAT AIDS**  
 8 **EFFECTIVE OVERSIGHT AND MANAGEMENT.**

9 In developing NASA’s budget request for inclusion in  
 10 the Budget of the United States for fiscal year 2007 and  
 11 thereafter, the Administrator shall—

12 (1) include line items for—

13 (A) science, aeronautics, and exploration;

14 (B) exploration capabilities; and

15 (C) the Office of the Inspector General;

16 (2) enumerate separately, within the science,  
 17 aeronautics, and exploration account, the requests  
 18 for—

19 (A) space science;

20 (B) Earth science; and

21 (C) aeronautics;

22 (3) include, within the exploration capabilities  
 23 account, the requests for—

24 (A) the Space Shuttle; and

25 (B) the ISS; and

1 (4) enumerate separately the specific request  
2 for the independent technical authority within the  
3 appropriate account.

4 **SEC. 140. EARTH OBSERVING SYSTEM.**

5 (a) IN GENERAL.—Within 6 months after the date  
6 of enactment of this Act, the Administrator, in consulta-  
7 tion with the Administrator of the National Oceanic and  
8 Atmospheric Administration and the Director of the  
9 United States Geological Survey, shall submit a plan to  
10 the Senate Committee on Commerce, Science, and Trans-  
11 portation and the House of Representatives Committee on  
12 Science to ensure the long-term vitality of the earth ob-  
13 serving system at NASA.

14 (b) PLAN REQUIREMENTS.—The plan shall—

15 (1) address such issues as—

16 (A) out-year budgetary projections;

17 (B) technical requirements for the system;

18 and

19 (C) integration into the Global Earth Ob-  
20 serving System of Systems; and

21 (2) evaluate—

22 (A) the need to proceed with any NASA  
23 missions that have been delayed or canceled;

24 (B) plans for transferring needed capabili-  
25 ties from some canceled or de-scoped missions

1 to the National Polar-orbiting Environmental  
2 Satellite System;

3 (C) the technical base for exploratory earth  
4 observing systems, including new satellite archi-  
5 tectures and instruments that enable global cov-  
6 erage, all-weather, day and night imaging of the  
7 Earth’s surface features;

8 (D) the need to strengthen research and  
9 analysis programs; and

10 (E) the need to strengthen the approach to  
11 obtaining important climate observations and  
12 data records.

13 (c) EARTH OBSERVING SYSTEM DEFINED.—In this  
14 section, the term “earth observing system” means the se-  
15 ries of satellites, a science component, and a data system  
16 for long-term global observations of the land surface, bio-  
17 sphere, solid Earth, atmosphere, and oceans.

18 **SEC. 141. NASA HEALTHCARE PROGRAM.**

19 The Administrator shall develop policies, procedures,  
20 and plans necessary for—

21 (1) the establishment of a lifetime healthcare  
22 program for NASA astronauts and their families;  
23 and

1           (2) the study and analysis of the healthcare  
2       data obtained in order to understand the longitu-  
3       dinal health effects of space flight on humans better.

4 **SEC. 142. ASSESSMENT OF EXTENSION OF DATA COLLEC-**  
5 **TION FROM ULYSSES AND VOYAGER SPACE-**  
6 **CRAFT.**

7       (a) ASSESSMENT.—Not later than 60 days after the  
8       date of the enactment of this Act, the Administrator shall  
9       carry out an assessment of the costs and benefits of ex-  
10      tending, to such date as the Administrator considers ap-  
11      propriate for purposes of the assessment, the date of the  
12      termination of data collection from the Ulysses spacecraft  
13      and the Voyager spacecraft.

14      (b) REPORT.—Not later than 30 days after com-  
15      pleting the assessment required by subsection (a), the Ad-  
16      ministrator shall submit a report on the assessment to the  
17      Senate Committee on Commerce, Science, and Transpor-  
18      tation and the House of Representatives Committee on  
19      Science.

20 **SEC. 143. PROGRAM TO EXPAND DISTANCE LEARNING IN**  
21 **RURAL UNDERSERVED AREAS.**

22      (a) IN GENERAL.—The Administrator shall develop  
23      or expand programs to extend science and space edu-  
24      cational outreach to rural communities and schools  
25      through video conferencing, interpretive exhibits, teacher

1 education, classroom presentations, and student field  
2 trips.

3 (b) PRIORITIES.—In carrying out subsection (a), the  
4 Administrator shall give priority to existing programs, in-  
5 cluding Challenger Learning Centers—

6 (1) that utilize community-based partnerships  
7 in the field;

8 (2) that build and maintain video conference  
9 and exhibit capacity;

10 (3) that travel directly to rural communities  
11 and serve low-income populations; and

12 (4) with a special emphasis on increasing the  
13 number of women and minorities in the science and  
14 engineering professions.

15 **SEC. 144. INSTITUTIONS IN NASA'S MINORITY INSTITU-**  
16 **TIONS PROGRAM.**

17 The matter appearing under the heading “SMALL  
18 AND DISADVANTAGED BUSINESS” in title III of the De-  
19 partments of Veterans Affairs and House and Urban De-  
20 velopment, and Independent Agencies Appropriations Act,  
21 1990 (42 U.S.C. 2473b; 103 Stat. 863) is amended by  
22 striking “Historically Black Colleges and Universities  
23 and” and inserting “Historically Black Colleges and Uni-  
24 versities that are part B institutions (as defined in section  
25 322(2) of the Higher Education Act of 1965 (20 U.S.C.

1 1061(2))), Hispanic-serving institutions (as defined in sec-  
 2 tion 502(a)(5) of that Act (20 U.S.C. 1101a(a)(5)), Tribal  
 3 Colleges or Universities (as defined in section 316(b)(3)  
 4 of that Act (20 U.S.C. 1059c(b)(3)), Alaskan Native-serv-  
 5 ing institutions (as defined in section 317(b)(2) of that  
 6 Act (20 U.S.C. 1059d(b)(2)), Native Hawaiian-serving  
 7 institutions (as defined in section 317(b)(4) of that Act  
 8 (20 U.S.C. 1059d(b)(4)), and”.

9 **SEC. 145. AVIATION SAFETY PROGRAM.**

10 The Administrator shall make available upon request  
 11 satellite imagery of remote terrain to the Administrator  
 12 of the Federal Aviation Administration, or the Director  
 13 of the Five Star Medallion Program, for aviation safety  
 14 and aerial photography programs to assist and train pilots  
 15 in navigating challenging topographical features of such  
 16 terrain.

17 **SEC. 146. ATMOSPHERIC, GEOPHYSICAL, AND ROCKET RE-**  
 18 **SEARCH AUTHORIZATION.**

19 There are authorized to be appropriated to the Ad-  
 20 ministrator for atmospheric, geophysical, or rocket re-  
 21 search at the Poker Flat Research Range and the Kodiak  
 22 Launch Complex, not more than \$1,000,000 for each of  
 23 fiscal years 2006 through 2010.



1 **SEC. 147. ORBITAL DEBRIS.**

2       The Administrator, in conjunction with the heads of  
3 other Federal agencies, shall take steps to develop or ac-  
4 quire technologies that will enable NASA to decrease the  
5 risks associated with orbital debris.

6 **SEC. 148. CONTINUATION OF CERTAIN EDUCATIONAL PRO-**  
7 **GRAMS.**

8       From amounts appropriated to NASA for educational  
9 programs, the Administrator shall ensure continuation of  
10 the Space Grant Program, the Experimental Program to  
11 Stimulate Competitive Research, and the NASA Explorer  
12 School to motivate and develop the next generation of ex-  
13 plorers.

14 **SEC. 149. ESTABLISHMENT OF THE CHARLES “PETE”**  
15 **CONRAD ASTRONOMY AWARDS PROGRAM.**

16       (a) IN GENERAL.—The Administrator shall establish  
17 a program to be known as the Charles “Pete” Conrad As-  
18 tronomy Awards Program.

19       (b) AWARDS.—The Administrator shall make an an-  
20 nual award under the program of—

21           (1) \$3,000 to the amateur astronomer or group  
22 of amateur astronomers who in the preceding cal-  
23 endar year discovered the intrinsically brightest  
24 near-Earth asteroid among the near-Earth asteroids  
25 that were discovered during that year by amateur  
26 astronomers or groups of amateur astronomers; and

1           (2) \$3,000 to the amateur astronomer or group  
 2           of amateur astronomers who made the greatest con-  
 3           tribution to the Minor Planet Center's mission of  
 4           cataloging near-Earth asteroids during the preceding  
 5           year.

6           (c) QUALIFICATION FOR AWARD.—

7           (1) RECOMMENDATION.—These awards shall be  
 8           made based on the recommendation of the Minor  
 9           Planet Center of the Smithsonian Astrophysical Ob-  
 10          servatory.

11          (2) LIMITATION.—No individual who is not a  
 12          citizen or permanent resident of the United States  
 13          at the time of that individual's discovery or contribu-  
 14          tion may receive an award under this program.

15   **SEC. 150. GAO ASSESSMENT OF FEASIBILITY OF MOON AND**  
 16                   **MARS EXPLORATION MISSIONS.**

17          Within 9 months after the date of enactment of this  
 18   Act, the Comptroller General shall transmit to the Senate  
 19   Committee on Commerce, Science, and Transportation  
 20   and the House of Representatives Committee on Science  
 21   an assessment of the feasibility of NASA's planning for  
 22   exploration of the Moon and Mars, giving special consider-  
 23   ation to the long-term cost implications of program archi-  
 24   tecture and schedules. The Comptroller General shall in-  
 25   clude in this assessment the short- and long-term impact

1 of the exploration program on other NASA program areas,  
2 including aeronautics, space science, earth science and  
3 NASA's overall research and technology development  
4 budget.

5 **SEC. 151. WORKFORCE.**

6 (a) IN GENERAL.—The Administrator shall develop  
7 a human capital strategy to ensure that NASA has a  
8 workforce of the appropriate size and with the appropriate  
9 skills to carry out the programs of NASA, consistent with  
10 the policies and plans developed pursuant to this section.  
11 The strategy shall ensure that current personnel are uti-  
12 lized, to the maximum extent feasible, in implementing the  
13 vision for space exploration and NASA's other programs.  
14 The strategy shall cover the period through fiscal year  
15 2011.

16 (b) CONTENT.—The strategy shall describe, at a  
17 minimum—

18 (1) any categories of employees NASA intends  
19 to reduce, the expected size and timing of those re-  
20 ductions, the methods NASA intends to use to make  
21 the reductions, and the reasons NASA no longer  
22 needs those employees;

23 (2) any categories of employees NASA intends  
24 to increase, the expected size and timing of those in-  
25 creases, the methods NASA intends to use to recruit

1 the additional employees, and the reasons NASA  
2 needs those employees;

3 (3) the steps NASA will use to retain needed  
4 employees; and

5 (4) the budget assumptions of the strategy,  
6 which for fiscal years 2006 and 2007 shall be con-  
7 sistent with the authorizations provided in subtitle  
8 A, and any expected additional costs or savings from  
9 the strategy by fiscal year.

10 (c) SCHEDULE.—The Administrator shall transmit  
11 the strategy developed under this section to the Senate  
12 Committee on Commerce, Science, and Transportation  
13 and House of Representatives Committee on Science not  
14 later than the date on which the President submits the  
15 proposed budget for the Federal Government for fiscal  
16 year 2007 to the Congress. At least 60 days before trans-  
17 mitting the strategy, NASA shall provide a draft of the  
18 strategy to its Federal Employee Unions for a 30-day con-  
19 sultation period after which NASA shall respond in writ-  
20 ing to any written concerns provided by the Unions.

21 (d) LIMITATION.—

22 (1) IN GENERAL.—NASA may not initiate any  
23 buyout offer after the date of enactment of this Act  
24 until 60 days after the strategy required by this sub-  
25 section has been transmitted to the Senate Com-

mittee on Commerce, Science, and Transportation  
 and House of Representatives Committee on Science  
 in accordance with subsection (c). NASA may not  
 implement any reduction-in-force or other involun-  
 tary separations (except for cause) prior to June 1,  
 2007, except as provided in paragraph (2).

(2) EXCEPTIONS.—

(A) SPECIFIC BUY-OUTS.—Notwith-  
 standing paragraph (1), NASA may make ex-  
 ceptions can be made for specific buy-outs on a  
 case-by-case basis, if NASA provides informa-  
 tion to the Committees that justifies those spe-  
 cific buy-outs, including why the relevant em-  
 ployees could not be utilized to fulfill other  
 NASA missions.

(B) EMERGENCY REDUCTIONS-IN-  
 FORCE.—NASA may also request an exception  
 for an emergency reduction-in-force of manage-  
 ment personnel by transmitting to the  
 Committees—

(i) a detailed rationale for the pro-  
 posed reduction-in-force;

(ii) an explanation of why the pro-  
 posed reduction-in-force cannot wait until  
 after the workforce strategy has been

1 transmitted to the Committees in accord-  
 2 ance with the requirements of this section;  
 3 and  
 4 (iii) an explanation of why the rel-  
 5 evant employees could not be utilized to  
 6 fulfill other NASA missions.

7 **SEC. 152. MAJOR RESEARCH EQUIPMENT AND FACILITIES.**

8 (a) IN GENERAL.—Notwithstanding any other provi-  
 9 sion of law, the National Science Foundation may use  
 10 funds in the major research equipment and facilities con-  
 11 struction account for the design and development of  
 12 projects that—

13 (1) have been given a very high rating by rel-  
 14 evant scientific peer review panels in the relevant  
 15 discipline;

16 (2) have substantial cost-sharing with non-  
 17 Foundation entities; and

18 (3) have passed a critical design review.

19 (b) NATIONAL SCIENCE BOARD APPROVAL.—Noth-  
 20 ing in subsection (a) shall be construed to eliminate the  
 21 need for approval by the National Science Board before  
 22 such equipment and facilities are eligible for acquisition,  
 23 construction, commissioning, or upgrading.

1 **SEC. 153. DATA ON SPECIFIC FIELDS OF STUDY.**

2 (a) IN GENERAL.—The National Science Foundation  
3 shall collect statistically reliable data through the Amer-  
4 ican Community Survey on the field of degree of college-  
5 educated individuals.

6 (b) ADDITIONAL CENSUS QUESTION.—In order to fa-  
7 cilitate the implementation of subsection (a), the Secretary  
8 of Commerce shall expand the American Community Sur-  
9 vey to include a question to elicit information concerning  
10 the field of study in which college-educated individuals re-  
11 ceived their degrees. The Director of the Bureau of the  
12 Census shall consult with the Director of the National  
13 Science Foundation concerning the wording of the ques-  
14 tion or questions to be added to the Survey.

15 **Subtitle C—Limitations and**  
16 **Special Authority**

17 **SEC. 161. OFFICIAL REPRESENTATIONAL FUND.**

18 Amounts appropriated pursuant to paragraphs (1)  
19 and (2) of section 101 may be used, but not to exceed  
20 \$70,000, for official reception and representation ex-  
21 penses.

22 **SEC. 162. FACILITIES MANAGEMENT.**

23 NASA shall develop a facilities investment plan  
24 through fiscal year 2015 that takes into account unique-  
25 ness, mission dependency, and other studies required by  
26 this Act.

## **TITLE II—INTERNATIONAL SPACE STATION**

### **SEC. 201. INTERNATIONAL SPACE STATION COMPLETION.**

#### **(a) ELEMENTS, CAPABILITIES, AND CONFIGURATION**

**CRITERIA.**—The Administrator shall ensure that the ISS will be able to—

(1) fulfill international partner agreements and provide a diverse range of research capacity, including a high rate of human biomedical research protocols, countermeasures, applied bio-technologies, technology and exploration research, and other priority areas;

(2) have an ability to support crew size of at least 6 persons;

(3) support crew exploration vehicle docking and automated docking of cargo vehicles or modules launched by either heavy-lift or commercially-developed launch vehicles; and

(4) be operated at an appropriate risk level.

**(b) CONTINGENCY PLAN.**—The transportation plan to support ISS shall include contingency options to ensure sufficient logistics and on-orbit capabilities to support any potential hiatus between Space Shuttle availability and follow-on crew and cargo systems, and provide sufficient pre-



1 positioning of spares and other supplies needed to accom-  
 2 modate any such hiatus.

3 (c) CERTIFICATION.—Within 60 days after the date  
 4 of enactment of this Act, and before making any change  
 5 in the ISS assembly sequence in effect on the date of en-  
 6 actment of this Act, the Administrator shall certify in  
 7 writing to the Senate Committee on Commerce, Science,  
 8 and Transportation and the House of Representatives  
 9 Committee on Science NASA’s plan to meet the require-  
 10 ments of subsections (a) and (b).

11 (d) COST LIMITATION FOR THE ISS.—Within 6  
 12 months after the date of enactment of this Act, the Ad-  
 13 ministrator shall submit to the Congress information per-  
 14 taining to the impact of the Columbia accident and the  
 15 implementation of full cost accounting on the development  
 16 costs of the International Space Station. The Adminis-  
 17 trator shall also identify any statutory changes needed to  
 18 section 202 of the NASA Authorization Act of 2000 to  
 19 address those impacts.

20 **SEC. 202. RESEARCH AND SUPPORT CAPABILITIES ON**  
 21 **INTERNATIONAL SPACE STATION.**

22 (a) IN GENERAL.—The Administrator shall—

23 (1) within 60 days after the date of enactment  
 24 of this Act, provide an assessment of biomedical and  
 25 life science research planned for implementation

1       aboard the ISS that includes the identification of re-  
2       search which can be performed in ground-based fa-  
3       cilities and then, if appropriate, validated in space to  
4       the Senate Committee on Commerce, Science, and  
5       Transportation and the House of Representatives  
6       Committee on Science;

7               (2) ensure the capacity to support ground-based  
8       research leading to spaceflight of scientific research  
9       in a variety of disciplines with potential direct na-  
10      tional benefits and applications that can advance  
11      significantly from the uniqueness of micro-gravity;

12             (3) restore and protect such potential ISS re-  
13      search activities as molecular crystal growth, animal  
14      research, basic fluid physics, combustion research,  
15      cellular biotechnology, low temperature physics, and  
16      cellular research at a level which will sustain the ex-  
17      isting scientific expertise and research capabilities  
18      until such time as additional funding or resources  
19      from sources other than NASA can be identified to  
20      support these activities within the framework of the  
21      National Laboratory provided for in section 203 of  
22      this Act;

23             (4) consider the need for a life sciences cen-  
24      trifuge and any associated holding facilities; and

1           (5) within 1 year after the date of enactment  
2           of this Act, develop a research plan that will dem-  
3           onstrate the process by which NASA will evolve the  
4           ISS research portfolio in a manner consistent with  
5           the planned growth and evolution of ISS on-orbit  
6           and transportation capabilities.

7           (b) MAINTENANCE OF ON-ORBIT ANALYTICAL CAPA-  
8           BILITIES.—The Administrator shall ensure that on-orbit  
9           analytical capabilities to support diagnostic human re-  
10          search, as well as on-orbit characterization of molecular  
11          crystal growth, cellular research, and other research prod-  
12          ucts and results are developed and maintained, as an al-  
13          ternative to Earth-based analysis requiring the capability  
14          of returning research products to Earth.

15          (c) ASSESSMENT OF POTENTIAL SCIENTIFIC  
16          USES.—The Administrator shall assess further potential  
17          possible scientific uses of the ISS for other applications,  
18          such as technology development, development of manufac-  
19          turing processes, Earth observation and characterization,  
20          and astronomical observations.

21          (d) TRANSITION TO PUBLIC-PRIVATE RESEARCH OP-  
22          ERATIONS.—By no later than the date on which the as-  
23          sembly of the ISS is complete (as determined by the Ad-  
24          ministrator), the Administrator shall initiate steps to tran-  
25          sition research operations on the ISS to a greater private—

1 public operating relationship pursuant to section 203 of  
2 this Act.

3 **SEC. 203. NATIONAL LABORATORY STATUS FOR INTER-**  
4 **NATIONAL SPACE STATION.**

5 (a) IN GENERAL.—In order to accomplish the objec-  
6 tives listed in section 202, the United States segment of  
7 the ISS is hereby designated a national laboratory facility.  
8 The Administrator, after consultation with the Director  
9 of the Office of Science and Technology Policy, shall de-  
10 velop the national laboratory facility to oversee scientific  
11 utilization of an ISS national laboratory within the organi-  
12 zational structure of NASA.

13 (b) NATIONAL LABORATORY FUNCTIONS.—The Ad-  
14 ministrator shall seek to use the national laboratory to in-  
15 crease the utilization of the ISS by other national and  
16 commercial users and to maximize available NASA fund-  
17 ing for research through partnerships, cost-sharing agree-  
18 ments, and arrangements with non-NASA entities.

19 (c) IMPLEMENTATION PLAN.—Within 1 year after  
20 the date of enactment of this Act, the Administrator shall  
21 provide an implementation plan to the Senate Committee  
22 on Commerce, Science, and Transportation and the House  
23 of Representatives Committee on Science for establish-  
24 ment of the ISS national laboratory facility which, at a  
25 minimum, shall include—

- 1 (1) proposed on-orbit laboratory functions;
- 2 (2) proposed ground-based laboratory facilities;
- 3 (3) detailed laboratory management structure,
- 4 concept of operations, and operational feasibility;
- 5 (4) detailed plans for integration and conduct
- 6 of ground and space-based research operations;
- 7 (5) description of funding and workforce re-
- 8 source requirements necessary to establish and oper-
- 9 ate the laboratory;
- 10 (6) plans for accommodation of existing inter-
- 11 national partner research obligations and commit-
- 12 ments; and
- 13 (7) detailed outline of actions and timeline nec-
- 14 essary to implement and initiate operations of the
- 15 laboratory.
- 16 (d) U.S. SEGMENT DEFINED.—In this section the
- 17 term “United States Segment of the ISS” means those
- 18 elements of the ISS manufactured—
- 19 (1) by the United States; or
- 20 (2) for the United States by other nations in
- 21 exchange for funds or launch services.

1 **SEC. 204. COMMERCIAL SUPPORT OF INTERNATIONAL**  
 2 **SPACE STATION OPERATIONS AND UTILIZA-**  
 3 **TION.**

4 The Administrator shall purchase commercial serv-  
 5 ices for support of the ISS for cargo and other needs, and  
 6 for enhancement of the capabilities of the ISS, to the max-  
 7 imum extent possible, in accordance with Federal procure-  
 8 ment law.

9 **SEC. 205. USE OF THE INTERNATIONAL SPACE STATION**  
 10 **AND ANNUAL REPORT.**

11 (a) **POLICY.**—It is the policy of the United States—

12 (1) to ensure diverse and growing utilization of  
 13 benefits from the ISS; and

14 (2) to increase commercial operations in low-  
 15 Earth orbit and beyond that are supported by na-  
 16 tional and commercial space transportation capabili-  
 17 ties.

18 (b) **USE OF INTERNATIONAL SPACE STATION.**—The  
 19 Administrator shall conduct broadly focused scientific and  
 20 exploration research and development activities using the  
 21 ISS in a manner consistent with the provisions of this  
 22 title, and advance the Nation’s exploration of the Moon  
 23 and beyond, using the ISS as a test-bed and outpost for  
 24 operations, engineering, and scientific research.

25 (c) **REPORTS.**—No later than March 31 of each year  
 26 the Administrator shall submit a report to the Senate

1 Committee on Commerce, Science, and Transportation  
 2 and the House of Representatives Committee on Science  
 3 on the use of the ISS for these purposes, with implementa-  
 4 tion milestones and associated results.

## 5 **TITLE III—NATIONAL SPACE** 6 **TRANSPORTATION POLICY**

### 7 **SEC. 301. UNITED STATES HUMAN-RATED LAUNCH CAPAC-** 8 **ITY ASSESSMENT.**

9 Notwithstanding any other provision of law, the Ad-  
 10 ministrator shall, within 60 days after the date of enact-  
 11 ment of this Act, provide to the Senate Committee on  
 12 Commerce, Science, and Transportation and the House of  
 13 Representatives Committee on Science, a full description  
 14 of the transportation requirements needed to support the  
 15 space launch and transportation transition implementa-  
 16 tion plan required by section 136 of this Act, as well as  
 17 for the ISS, including—

18 (1) the manner in which the capabilities of any  
 19 proposed human-rated crew and launch vehicles  
 20 meet the requirements of the implementation plan  
 21 under section 136 of this Act;

22 (2) a retention plan of skilled personnel from  
 23 the legacy Shuttle program which will sustain the  
 24 level of safety for that program through the final  
 25 flight and transition plan that will ensure that any

1 NASA programs can utilize the human capital re-  
2 sources of the Shuttle program, to the maximum ex-  
3 tent practicable;

4 (3) the implications for and impact on the Na-  
5 tion's aerospace industrial base;

6 (4) the manner in which the proposed vehicles  
7 contribute to a national mixed fleet launch and flight  
8 capacity;

9 (5) the nature and timing of the transition from  
10 the Space Shuttle to the workforce, the proposed ve-  
11 hicles, and any related infrastructure;

12 (6) support for ISS crew transportation, ISS  
13 utilization, and lunar exploration architecture;

14 (7) for any human rated vehicle, a crew escape  
15 system, as well as substantial protection against or-  
16 bital debris strikes that offers a high level of safety;

17 (8) development risk areas;

18 (9) the schedule and cost;

19 (10) the relationship between crew and cargo  
20 capabilities; and

21 (11) the ability to reduce risk through the use  
22 of currently qualified hardware.

23 **SEC. 302. SPACE SHUTTLE TRANSITION.**

24 (a) **POLICY STATEMENT.**—It is the policy of the  
25 United States to possess the capability for assured human



1 access to space. The Administrator shall act to ensure that  
2 the United States retains that capacity on a continuous  
3 basis. The Administrator shall conduct the transition from  
4 the Space Shuttle orbiter to a replacement capacity in a  
5 manner that efficiently uses the personnel, capabilities,  
6 and infrastructure that are currently available to the ex-  
7 tent feasible.

8 (b) PROGRESS REPORT.—Within 180 days after the  
9 date of enactment of this Act and annually thereafter, the  
10 Administrator shall report to the Senate Committee on  
11 Commerce, Science, and Transportation and the House of  
12 Representatives Committee on Science on the progress  
13 and the estimated amount of time before the next genera-  
14 tion human-rated NASA spacecraft will demonstrate  
15 crewed, orbital spaceflight.

16 (c) POLICY COMPLIANCE REPORT.—If, 1 year before  
17 the final flight of the Space Shuttle orbiter, the United  
18 States has not demonstrated a replacement human space  
19 flight system, the Administrator shall certify that the  
20 United States cannot uphold the policy outlined in sub-  
21 section (a) and shall provide a report to the Senate Com-  
22 mittee on Commerce, Science, and Transportation and the  
23 House of Representatives Committee on Science  
24 describing—

1           (1) United States strategic risks associated with  
2           the hiatus or gap;

3           (2) the estimated length of time during which  
4           the United States will not have independent human  
5           access to space;

6           (3) what steps will be taken to shorten that  
7           length of time; and

8           (4) what other means will be used to allow  
9           human access to space during that time.

10          (d) TRANSITION PLAN REPORT.—After providing the  
11 information required by section 301 to the Committees,  
12 the Administrator shall transmit a report to the Senate  
13 Committee on Commerce, Science, and Transportation  
14 and the House of Representatives Committee on Science  
15 containing a detailed and comprehensive Space Shuttle  
16 transition plan that includes any necessary recertification,  
17 including requirements, assumptions, and milestones, in  
18 order to utilize the Space Shuttle orbiter beyond calendar  
19 year 2010.

20          (e) CONTRACT TERMINATIONS; VENDOR REPLACE-  
21 MENTS.—The Administrator may not terminate any con-  
22 tracts nor replace any vendors associated with the Space  
23 Shuttle until the Administrator transmits the report re-  
24 quired by subsection (b) to the Committees.

1 **SEC. 303. COMMERCIAL LAUNCH VEHICLES.**

2 It is the sense of Congress that the Administrator  
3 should use current and emerging commercial launch vehi-  
4 cles to fulfill appropriate mission needs, including the sup-  
5 port of low-Earth orbit and lunar exploration operations.

6 **SEC. 304. SECONDARY PAYLOAD CAPABILITY.**

7 (a) IN GENERAL.—In order to help develop a cadre  
8 of experienced engineers and to provide more routine and  
9 affordable access to space, the Administrator shall provide  
10 the capabilities to support secondary payloads on United  
11 States launch vehicles, including free flyers, for satellites  
12 or scientific payloads weighing less than 500 kilograms.

13 (b) FEASIBILITY STUDY.—The Administrator shall  
14 initiate a feasibility study for establishing a National Free  
15 Flyer Launch Center as a means of consolidating and inte-  
16 grating secondary launch capabilities, launch opportuni-  
17 ties, and payloads.

18 (c) ASSESSMENT.—The feasibility study required in  
19 this section shall include an assessment of the potential  
20 utilization of existing launch and launch support facilities  
21 and capabilities in the states of Montana and New Mexico  
22 and their respective contiguous states, and the state of  
23 Alaska, and shall include an assessment of the feasibility  
24 of integrating the potential National Free Flyer Launch  
25 Center within the operations and facilities of an existing

1 non-profit organization such as the Inland Northwest  
 2 Space Alliance in Missoula, Montana, or similar entity.

3 **SEC. 305. POWER AND PROPULSION REPORTING.**

4       The Administrator shall, within 180 days after the  
 5 date of enactment of this Act, provide to the Senate Com-  
 6 mittee on Commerce, Science, and Transportation and the  
 7 House of Representatives Committee on Science, a full de-  
 8 scription of plans to develop and utilize nuclear power and  
 9 nuclear propulsion capabilities to achieve agency goals and  
 10 any requirements in this Act, and address how those plans  
 11 meet the intent of the Vision for Space Exploration and  
 12 the President’s Space Transportation Policy Directive.

13 **SEC. 306. UTILIZATION OF NASA FIELD CENTERS AND**  
 14 **WORKFORCE.**

15       (a) IN GENERAL.—In budgeting for and carrying out  
 16 elements of this title, the Administrator shall make the  
 17 most effective use of existing research, development, test-  
 18 ing, and space exploration expertise and facilities resident  
 19 within NASA field centers.

20       (b) RESPONSIBILITIES OF FIELD CENTERS.—The  
 21 Administrator shall take appropriate action to balance re-  
 22 sponsibilities between the field centers for leading the de-  
 23 velopment of systems relevant to the Vision for Space Ex-  
 24 ploration, including systems identified in this title or any  
 25 architecture studies performed by NASA.

## **TITLE IV—ENABLING COMMERCIAL ACTIVITY**

### **SEC. 401. COMMERCIALIZATION PLAN.**

(a) IN GENERAL.—The Administrator, in consultation with the Associate Administrator for Space Transportation of the Federal Aviation Administration, the Director of the Office of Space Commercialization of the Department of Commerce, and any other relevant agencies, shall develop a commercialization plan to support the human missions to the Moon and Mars, to support Low-Earth Orbit activities and Earth science mission and applications, and to transfer science research and technology to society. The plan shall identify opportunities for the private sector to participate in the future missions and activities, including opportunities for partnership between NASA and the private sector in the development of technologies and services, shall emphasize the utilization by NASA of advancements made by the private sector in space launch and orbital hardware, and shall include opportunities for innovative collaborations between NASA and the private sector under existing authorities of NASA for reimbursable and non-reimbursable agreements under the National Aeronautics and Space Act of 1958 (42 U.S.C. 2451 et seq.).

1 (b) REPORT.—Within 180 days after the date of en-  
2 actment of this Act, the Administrator shall submit a copy  
3 of the plan to the Senate Committee on Commerce,  
4 Science, and Transportation and the House of Represent-  
5 atives Committee on Science.

6 **SEC. 402. COMMERCIAL TECHNOLOGY TRANSFER PRO-**  
7 **GRAM.**

8 (a) IN GENERAL.—The Administrator shall execute  
9 a commercial technology transfer program with the goal  
10 of facilitating the exchange services, products, and intel-  
11 lectual property between NASA and the private sector.  
12 This program shall be maintained in a manner that pro-  
13 vides measurable benefits for the agency, the domestic  
14 economy, and research communities.

15 (b) PROGRAM STRUCTURE.—In carrying out the pro-  
16 gram described in paragraph (a), the Administrator shall  
17 maintain the funding and program structure of NASA's  
18 existing technology transfer and commercialization organi-  
19 zations through the end of fiscal year 2006.

1 **SEC. 403. AUTHORITY FOR COMPETITIVE PRIZE PROGRAM**  
 2 **TO ENCOURAGE DEVELOPMENT OF AD-**  
 3 **VANCED SPACE AND AERONAUTICAL TECH-**  
 4 **NOLOGIES.**

5 Title III of the National Aeronautics and Space Act  
 6 of 1958 (42 U.S.C. 2451 et seq.) is amended by adding  
 7 at the end the following:

8 **“SEC. 316. PROGRAM ON COMPETITIVE AWARD OF PRIZES**  
 9 **TO ENCOURAGE DEVELOPMENT OF AD-**  
 10 **VANCED SPACE AND AERONAUTICAL TECH-**  
 11 **NOLOGIES.**

12 **“(a) PROGRAM AUTHORIZED.—**

13 **“(1) IN GENERAL.—**The Administrator may  
 14 carry out a program to award prizes to stimulate in-  
 15 novation in basic and applied research, technology  
 16 development, and prototype demonstration that have  
 17 the potential for application to the performance of  
 18 the space and aeronautical activities of the Adminis-  
 19 tration.

20 **“(2) USE OF PRIZE AUTHORITY.—**In carrying  
 21 out the program, the Administrator shall seek to de-  
 22 velop and support technologies and areas identified  
 23 in section 134 of this Act or other areas that the  
 24 Administrator determines to be providing impetus to  
 25 NASA’s overall exploration and science architecture  
 26 and plans, such as private efforts to detect near

1 Earth objects and, where practicable, utilize the  
 2 prize winner’s technologies in fulfilling NASA’s mis-  
 3 sions. The Administrator shall widely advertise any  
 4 competitions conducted under the program and must  
 5 include advertising to research universities.

6 “(3) COORDINATION.—The program shall be  
 7 implemented in compliance with section 138 of the  
 8 National Aeronautics and Space Administration Au-  
 9 thorization Act of 2005.

10 “(b) PROGRAM REQUIREMENTS.—

11 “(1) COMPETITIVE PROCESS.—Recipients of  
 12 prizes under the program under this section shall be  
 13 selected through one or more competitions conducted  
 14 by the Administrator.

15 “(2) ADVERTISING.—The Administrator shall  
 16 widely advertise any competitions conducted under  
 17 the program.

18 “(c) REGISTRATION; ASSUMPTION OF RISK.—

19 “(1) REGISTRATION.—Each potential recipient  
 20 of a prize in a competition under the program under  
 21 this section shall register for the competition.

22 “(2) ASSUMPTION OF RISK.—In registering for  
 23 a competition under paragraph (1), a potential re-  
 24 cipient of a prize shall assume any and all risks, and  
 25 waive claims against the United States Government



1 and its related entities, for any injury, death, dam-  
2 age, or loss of property, revenue, or profits, whether  
3 direct, indirect, or consequential, arising from par-  
4 ticipation in the competition, whether such injury,  
5 death, damage, or loss arises through negligence or  
6 otherwise, except in the case of willful misconduct.

7 “(3) RELATED ENTITY DEFINED.—In this sub-  
8 section, the term ‘related entity’ includes a con-  
9 tractor or subcontractor at any tier, a supplier, user,  
10 customer, cooperating party, grantee, investigator,  
11 or detailee.

12 “(d) LIMITATIONS.—

13 “(1) TOTAL AMOUNT.—The total amount of  
14 cash prizes available for award in competitions  
15 under the program under this section in any fiscal  
16 year may not exceed \$50,000,000.

17 “(2) APPROVAL REQUIRED FOR LARGE  
18 PRIZES.—No competition under the program may  
19 result in the award of more than \$1,000,000 in cash  
20 prizes without the approval of the Administrator or  
21 a designee of the Administrator.

22 “(e) RELATIONSHIP TO OTHER AUTHORITY.—The  
23 Administrator may utilize the authority in this section in  
24 conjunction with or in addition to the utilization of any  
25 other authority of the Administrator to acquire, support,

1 or stimulate basic and applied research, technology devel-  
 2 opment, or prototype demonstration projects.

3 “(f) AVAILABILITY OF FUNDS.—Funds appropriated  
 4 for the program authorized by this section shall remain  
 5 available until expended.”.

6 **SEC. 404. COMMERCIAL GOODS AND SERVICES.**

7 It is the sense of the Congress that NASA should  
 8 purchase commercially available space goods and services  
 9 to the fullest extent feasible in support of the human mis-  
 10 sions beyond Earth and should encourage commercial use  
 11 and development of space to the greatest extent prac-  
 12 ticable.

13 **TITLE V—AERONAUTICS**  
 14 **RESEARCH AND DEVELOPMENT**

15 **SEC. 501. GOVERNMENTAL INTEREST IN AERONAUTICS.**

16 Congress reaffirms the national commitment to aero-  
 17 nautics research made in the National Aeronautics and  
 18 Space Act of 1958. Aeronautical research and develop-  
 19 ment remains a core mission of NASA. NASA is the lead  
 20 agency for civil aeronautics research. NASA shall conduct  
 21 a robust program of aeronautics research that includes  
 22 fundamental basic research as well as research in the  
 23 fields of vehicle systems and of safety and security.

1   **SEC. 502. NATIONAL POLICY FOR AERONAUTICS RESEARCH**  
2                   **AND DEVELOPMENT.**

3           (a) IN GENERAL.—The President shall develop  
4 through NASA and other relevant entities, a national aer-  
5 onautics policy to guide the aeronautics programs of the  
6 United States through the year 2020. The development  
7 of this policy shall utilize external studies that have been  
8 conducted on the state of United States aeronautics and  
9 aviation research and have suggested policies to ensure  
10 continued competitiveness.

11          (b) CONTENT.—At a minimum the national aero-  
12 nautics policy shall describe—

13               (1) national goals for aeronautics research;

14               (2) the priority areas of research for aero-  
15 nautics through fiscal year 2011;

16               (3) the basis of which and the process by which  
17 priorities for ensuing fiscal years will be selected;  
18 and

19               (4) respective roles and responsibilities of var-  
20 ious Federal agencies in aeronautics research.

21          (c) NASA INPUT.—In providing input to and exe-  
22 cuting the National Aeronautics Policy, the Administrator,  
23 shall consider the following issues:

24               (1) The established governmental interest in  
25 conducting research and development programs for  
26 improvement of the usefulness, performance, speed,

1 safety, and efficiency of aeronautical and vehicles, as  
2 described in section 102(c)(2) of the National Aero-  
3 nautics and Space Act of 1958 and reaffirmed in  
4 section 501.

5 (2) The established governmental interest in  
6 conducting research and development programs that  
7 contribute to preservation of the role of the United  
8 States as a global leader in aeronautical technologies  
9 and in the application thereof in section 102(c)(5) of  
10 the National Aeronautics and Space Act of 1958  
11 and reaffirmed in section 501.

12 (3) The appropriate balance between long-term,  
13 high risk research and shorter, more incremental re-  
14 search, and the expected impact on the United  
15 States economy and public good.

16 (4) The appropriate balance between in-house  
17 research and procurement with industry and aca-  
18 demia.

19 (5) The extent to which NASA should address  
20 military and commercial aviation needs.

21 (6) How NASA will coordinate its aeronautics  
22 program with other Federal agencies.

23 (7) Opportunities for partnerships with the pri-  
24 vate sector.

25 (d) SCHEDULE.—

1           (1) No later than 1 year after the date of en-  
2           actment of this Act, the President shall submit the  
3           national aeronautics policy to the Appropriations  
4           Committees of the House of Representatives and the  
5           Senate, the House Committee on Science, and the  
6           Senate Committee on Commerce, Science, and  
7           Transportation.

8           (2) No later than 60 days after the transmittal  
9           of the policy, the Administrator shall submit  
10          NASA's response to the policy, to the Appropria-  
11          tions Committees of the House of Representatives  
12          and the Senate, the House Committee on Science,  
13          and the Senate Committee on Commerce, Science  
14          and Transportation.

15 **SEC. 503. HIGH PRIORITY AERONAUTICS RESEARCH AND**  
16 **DEVELOPMENT PROGRAMS.**

17          (a) IN GENERAL.—In its role as lead agency for civil  
18          aeronautics research and development, NASA shall de-  
19          velop programs and projects in accordance with the Na-  
20          tional Aeronautics Policy described in section 502, as well  
21          program areas listed in subsection (b). These programs  
22          must be driven by scientific merit.

23          (b) RESEARCH AND DEVELOPMENT.—In executing  
24          an aeronautics research and development program, the  
25          Administrator shall, at a minimum, within the budgetary

1 and programmatic resources provided, conduct programs  
2 in the following areas:

3           (1) FUNDAMENTAL RESEARCH.—The Adminis-  
4           trator shall establish a program of long-term funda-  
5           mental research in aeronautical sciences and tech-  
6           nologies that is not tied to specific development  
7           projects. The Administrator shall set aside no less  
8           than 5 percent of the aeronautics budget for this  
9           program. As part of this program, the Administrator  
10          is encouraged to make merit-reviewed grants to in-  
11          stitutions of higher learning, including such institu-  
12          tions located in states that participate in the Experi-  
13          mental Program to Stimulate Competitive Research.

14          (2) VEHICLE SYSTEMS RESEARCH AND TECH-  
15          NOLOGY.—In order to maintain United States eco-  
16          nomic competitiveness and protect the environment,  
17          the Administrator shall establish programs in each  
18          of the following technology areas:

19                (A) ENVIRONMENTAL AIRCRAFT RESEARCH  
20                AND DEVELOPMENT.—The Administrator shall  
21                establish an initiative with the objective of de-  
22                veloping and demonstrating in a relevant envi-  
23                ronment, technologies to enable the following  
24                commercial aircraft performance characteristics:

1 (i) NOISE.—Noise levels on takeoff  
 2 and on airport approach and landing that  
 3 do not exceed ambient noise levels in the  
 4 absence of flight operations in the vicinity  
 5 of airports from which such commercial  
 6 aircraft would normally operate;

7 (ii) ENERGY CONSUMPTION.—Twenty-  
 8 five percent reduction in the energy re-  
 9 quired for medium to long range flights,  
 10 compared to aircraft in commercial service  
 11 as of the date of enactment of this Act;  
 12 and

13 (iii) EMISSIONS.—Nitrogen oxides on  
 14 take-off and landing that are significantly  
 15 reduced, without adversely affecting hydro-  
 16 carbons and smoke, relative to aircraft in  
 17 commercial service as of the date of enact-  
 18 ment of this Act.

19 (B) SUPERSONIC TRANSPORT RESEARCH  
 20 AND DEVELOPMENT.—The Administrator shall  
 21 establish an initiative with the objective of de-  
 22 veloping and demonstrating in a relevant envi-  
 23 ronment within airframe and propulsion tech-  
 24 nologies to enable efficient, economical overland

1 flight of supersonic civil transport aircraft with  
2 no significant impact on the environment.

3 (C) ROTORCRAFT AND OTHER RUNWAY-  
4 INDEPENDENT AIR VEHICLES.—The Adminis-  
5 trator shall establish a rotorcraft and other  
6 runway-independent air vehicles initiative with  
7 the objective of developing and demonstrating  
8 improved safety, noise, and environmental im-  
9 pact in a relevant environment.

10 (D) HYPERSONICS RESEARCH.—The Ad-  
11 ministrator shall establish a hypersonics re-  
12 search program whose objective shall be to ex-  
13 plore the science and technology of hypersonic  
14 flight using air-breathing propulsion concepts,  
15 through a mix of theoretical work, basic and  
16 applied research, and development of flight re-  
17 search demonstration vehicles. Emphasis in the  
18 program shall be given to advancing and dem-  
19 onstrating turbine engine technology in the  
20 transition to hypersonic range Mach 3 to Mach  
21 5.

22 (E) REVOLUTIONARY AERONAUTICAL CON-  
23 CEPTS.—The Administrator shall establish a re-  
24 search program which covers a unique range of  
25 subsonic, fixed wing vehicles and propulsion



1            concepts. This research is intended to push  
 2            technology barriers beyond current subsonic  
 3            technology. Propulsion concepts include ad-  
 4            vanced materials, morphing engines, hybrid en-  
 5            gines, and fuel cells.

6            (F) MORE ELECTRIC AIRCRAFT INITIA-  
 7            TIVE.—The Administrator shall establish a pro-  
 8            gram for innovative and focused research and  
 9            development such as fuel cell technologies.

10          (3) AIRSPACE SYSTEMS RESEARCH.—The Air-  
 11          space Systems Research program shall pursue re-  
 12          search and development to enable revolutionary im-  
 13          provements to and modernization of the National  
 14          Airspace system, as well as to enable the introduc-  
 15          tion of new systems for vehicles that can take advan-  
 16          tage of an improved, modern air transportation sys-  
 17          tem. In pursuing research and development in this  
 18          area, the Administrator shall align the projects of  
 19          the Airspace Systems Research program so that they  
 20          directly support the objectives of the Joint Planning  
 21          and Development Office’s Next Generation air  
 22          Transportation System Integrated Plan.

23          (4) AVIATION SAFETY AND SECURITY RE-  
 24          SEARCH.—The Aviation Safety and Security Re-  
 25          search program shall pursue research and develop-

1        ment activities that directly address the safety and  
2        security needs of the National Airspace System and  
3        the aircraft that fly in it.

4    **SEC. 504. TEST FACILITIES.**

5        (a) Prior to completion of the National Aeronautics  
6    Policy described in section 502 and transmittal of such  
7    policy pursuant to subsection (d) of that section, the Ad-  
8    ministrator may not close, suspend, or terminate contracts  
9    for the operation of major aeronautical test facilities, in-  
10   cluding wind tunnels, unless the Administrator—

11            (1) certifies in writing that such closure will not  
12        have an adverse impact on NASA's ability to execute  
13        the National Policy and achieve the goals described  
14        in that Policy; and

15            (2) provides notification to and receives concur-  
16        rence from the Appropriations Committees of the  
17        House of Representatives and the Senate, the House  
18        Committee on Science, and the Senate Committee on  
19        Commerce, Science and Transportation 60 days in  
20        advance of such action.

21    **SEC. 505. MISCELLANEOUS PROVISIONS.**

22        (a) **WORKFORCE DEVELOPMENT.**—The Adminis-  
23    trator shall encourage the development of a skilled and  
24    diverse aeronautics research workforce using appropriate

1 available tools such as grants, scholarships for service, and  
2 fellowships.

3 (b) ALIGNMENT OF PROGRAMS.—Notwithstanding  
4 any other provision of this title, the Administrator shall  
5 align NASA’s aeronautics program with priorities estab-  
6 lished by the Joint Planning and Development Office and  
7 by the National Aeronautics Policy described in section  
8 502 of this Act.

## 9 **TITLE VI—MISCELLANEOUS AD-** 10 **MINISTRATIVE IMPROVE-** 11 **MENTS**

### 12 **SEC. 601. EXTENSION OF INDEMNIFICATION AUTHORITY.**

13 Section 309 of the National Aeronautics and Space  
14 Act of 1958 (42 U.S.C. 2458c) is amended by striking  
15 “December 31, 2002” and inserting “December 31,  
16 2007”, and by striking “September 30, 2005” and insert-  
17 ing “December 31, 2009”.

### 18 **SEC. 602. INTELLECTUAL PROPERTY PROVISIONS.**

19 Section 305 of the National Aeronautics and Space  
20 Act of 1958 (42 U.S.C. 2457) is amended by inserting  
21 after subsection (f) the following:

22 “(g) ASSIGNMENT OF PATENT RIGHTS, ETC.—

23 “(1) IN GENERAL.—Under agreements entered  
24 into pursuant to paragraph (5) or (6) of section

1       203(c) of this Act (42 U.S.C. 2473(c)(5) or (6)), the  
2       Administrator may—

3               “(A) grant or agree to grant in advance to  
4               a participating party, patent licenses or assign-  
5               ments, or options thereto, in any invention  
6               made in whole or in part by an Administration  
7               employee under the agreement; or

8               “(B) subject to section 209 of title 35,  
9               grant a license to an invention which is Feder-  
10              ally owned, for which a patent application was  
11              filed before the signing of the agreement, and  
12              directly within the scope of the work under the  
13              agreement, for reasonable compensation when  
14              appropriate.

15             “(2) EXCLUSIVITY.—The Administrator shall  
16             ensure, through such agreement, that the partici-  
17             pating party has the option to choose an exclusive  
18             license for a pre-negotiated field of use for any such  
19             invention under the agreement or, if there is more  
20             than 1 participating party, that the participating  
21             parties are offered the option to hold licensing rights  
22             that collectively encompass the rights that would be  
23             held under such an exclusive license by one party.

24             “(3) CONDITIONS.—In consideration for the  
25             Government’s contribution under the agreement,

1 grants under this subsection shall be subject to the  
2 following explicit conditions:

3 “(A) A nonexclusive, nontransferable, ir-  
4 revocable, paid-up license from the participating  
5 party to the Administration to practice the in-  
6 vention or have the invention practiced through-  
7 out the world by or on behalf of the Govern-  
8 ment. In the exercise of such license, the Gov-  
9 ernment shall not publicly disclose trade secrets  
10 or commercial or financial information that is  
11 privileged or confidential within the meaning of  
12 section 552 (b)(4) of title 5, United States  
13 Code, or which would be considered as such if  
14 it had been obtained from a non-Federal party.

15 “(B) If the Administration assigns title or  
16 grants an exclusive license to such an invention,  
17 the Government shall retain the right—

18 “(i) to require the participating party  
19 to grant to a responsible applicant a non-  
20 exclusive, partially exclusive, or exclusive  
21 license to use the invention in the appli-  
22 cant’s licensed field of use, on terms that  
23 are reasonable under the circumstances; or

1 “(ii) if the participating party fails to  
 2 grant such a license, to grant the license  
 3 itself.

4 “(C) The Government may exercise its  
 5 right retained under subparagraph (B) only in  
 6 exceptional circumstances and only if the Gov-  
 7 ernment determines that—

8 “(i) the action is necessary to meet  
 9 health or safety needs that are not reason-  
 10 ably satisfied by the participating party;

11 “(ii) the action is necessary to meet  
 12 requirements for public use specified by  
 13 Federal regulations, and such requirements  
 14 are not reasonably satisfied by the partici-  
 15 pating party; or

16 “(iii) the action is necessary to comply  
 17 with an agreement containing provisions  
 18 described in section 12(c)(4)(B) of the Ste-  
 19 venson-Wydler Technology Innovation Act  
 20 of 1980 (15 U.S.C. 3710a(c)(4)(B)).

21 “(4) APPEAL AND REVIEW OF DETERMINA-  
 22 TION.—A determination under paragraph  
 23 (3)(C) is subject to administrative appeal and  
 24 judicial review under section 203(b) of title 35,  
 25 United States Code.”.

1 **SEC. 603. RETROCESSION OF JURISDICTION.**

2 Title III of the National Aeronautics and Space Act  
3 of 1958, as amended by section 602 of this Act, is further  
4 amended by adding at the end the following:

5 **“SEC. 317. RETROCESSION OF JURISDICTION.**

6 “Notwithstanding any other provision of law, the Ad-  
7 ministrator may, whenever the Administrator considers it  
8 desirable, relinquish to a State all or part of the legislative  
9 jurisdiction of the United States over lands or interests  
10 under the Administrator’s control in that State. Relin-  
11 quishment of legislative jurisdiction under this section  
12 may be accomplished (1) by filing with the Governor of  
13 the State concerned a notice of relinquishment to take ef-  
14 fect upon acceptance thereof, or (2) as the laws of the  
15 State may otherwise provide.”.

16 **SEC. 604. RECOVERY AND DISPOSITION AUTHORITY.**

17 Title III of the National Aeronautics and Space Act  
18 of 1958, as amended by section 603 of this Act, is further  
19 amended by adding at the end the following:

20 **“SEC. 318. RECOVERY AND DISPOSITION AUTHORITY.**

21 “(a) IN GENERAL.—

22 “(1) CONTROL OF REMAINS.—Subject to para-  
23 graph (2), when there is an accident or mishap re-  
24 sulting in the death of a crewmember of a NASA  
25 human space flight vehicle, the Administrator may  
26 take control over the remains of the crewmember

1 and order autopsies and other scientific or medical  
2 tests.

3 “(2) TREATMENT.—Each crewmember shall  
4 provide the Administrator with his or her pref-  
5 erences regarding the treatment accorded to his or  
6 her remains and the Administrator shall, to the ex-  
7 tent possible, respect those stated preferences.

8 “(b) DEFINITIONS.—In this section:

9 “(1) CREWMEMBER.—The term ‘crewmember’  
10 means an astronaut or other person assigned to a  
11 NASA human space flight vehicle.

12 “(2) NASA HUMAN SPACE FLIGHT VEHICLE.—  
13 The term ‘NASA human space flight vehicle’ means  
14 a space vehicle, as defined in section 308(f)(1),  
15 that—

16 “(A) is intended to transport 1 or more  
17 persons;

18 “(B) designed to operate in outer space;  
19 and

20 “(C) is either owned by NASA, or owned  
21 by a NASA contractor or cooperating party and  
22 operated as part of a NASA mission or a joint  
23 mission with NASA.”.



1 **SEC. 605. REQUIREMENT FOR INDEPENDENT COST ANAL-**  
2 **YSIS.**

3 Section 301 of the National Aeronautics and Space  
4 Administration Authorization Act of 2000 (42 U.S.C.  
5 2459g) amended—

6 (1) by striking “Phase B” in subsection (a) and  
7 inserting “implementation”;

8 (2) by striking “Chief Financial Officer” each  
9 place it appears in subsection (a) and inserting “Ad-  
10 ministrator”;

11 (3) by inserting “and consider” in subsection  
12 (a) after “shall conduct”; and

13 (4) by striking subsection (b) and inserting the  
14 following:

15 “(b) IMPLEMENTATION DEFINED.—In this section,  
16 the term ‘implementation’ means all activity in the life  
17 cycle of a program or project after preliminary design,  
18 independent assessment of the preliminary design, and ap-  
19 proval to proceed into implementation, including critical  
20 design, development, certification, launch, operations, dis-  
21 posal of assets, and, for technology programs, develop-  
22 ment, testing, analysis and communication of the results  
23 to the customers.”.

1 **SEC. 606. ELECTRONIC ACCESS TO BUSINESS OPPORTUNI-**  
 2 **TIES.**

3 Title III of the National Aeronautics and Space Act  
 4 of 1958, as amended by section 604 of this Act, is further  
 5 amended by adding at the end the following:

6 **“SEC. 319. ELECTRONIC ACCESS TO BUSINESS OPPORTUNI-**  
 7 **TIES.**

8 “(a) IN GENERAL.—The Administrator may imple-  
 9 ment a pilot program providing for reduction in the wait-  
 10 ing period between publication of notice of a proposed con-  
 11 tract action and release of the solicitation for procure-  
 12 ments conducted by the National Aeronautics and Space  
 13 Administration.

14 “(b) APPLICABILITY.—The program implemented  
 15 under subsection (a) shall apply to non-commercial  
 16 acquisitions—

17 “(1) with a total value in excess of \$100,000  
 18 but not more than \$5,000,000, including options;

19 “(2) that do not involve bundling of contract re-  
 20 quirements as defined in section 3(o) of the Small  
 21 Business Act (15 U.S.C. 632(o)); and

22 “(3) for which a notice is required by section  
 23 8(e) of the Small Business Act (15 U.S.C. 637(e))  
 24 and section 18(a) of the Office of Federal Procure-  
 25 ment Policy Act (41 U.S.C. 416(a)).

26 “(c) NOTICE.—

1           “(1) Notice of acquisitions subject to the pro-  
 2           gram authorized by this section shall be made acces-  
 3           sible through the single Government-wide point of  
 4           entry designated in the Federal Acquisition Regula-  
 5           tion, consistent with section 30(c)(4) of the Office of  
 6           Federal Procurement Policy Act (41 U.S.C.  
 7           426(c)(4)).

8           “(2) Providing access to notice in accordance  
 9           with paragraph (1) satisfies the publication require-  
 10          ments of section 8(e) of the Small Business Act (15  
 11          U.S.C. 637(e)) and section 18(a) of the Office of  
 12          Federal Procurement Policy Act (41 U.S.C. 416(a)).

13          “(d) SOLICITATION.—Solicitations subject to the pro-  
 14          gram authorized by this section shall be made accessible  
 15          through the Government-wide point of entry, consistent  
 16          with requirements set forth in the Federal Acquisition  
 17          Regulation, except for adjustments to the wait periods as  
 18          provided in subsection (e).

19          “(e) WAIT PERIOD.—

20                 “(1) Whenever a notice required by section  
 21                 8(e)(1)(A) of the Small Business Act (15 U.S.C.  
 22                 637(e)(1)(A)) and section 18(a) of the Office of  
 23                 Federal Procurement Policy Act (41 U.S.C. 416(a))  
 24                 is made accessible in accordance with subsection (c)  
 25                 of this section, the wait period set forth in section

1        8(e)(3)(A) of the Small Business Act (15 U.S.C.  
 2        637(e)(3)(A)) and section 18(a)(3)(A) of the Office  
 3        of Federal Procurement Policy Act (41 U.S.C.  
 4        416(a)(3)(A)), shall be reduced by 5 days. If the so-  
 5        licitation applying to that notice is accessible elec-  
 6        tronically in accordance with subsection (d) simulta-  
 7        neously with issuance of the notice, the wait period  
 8        set forth in section 8(e)(3)(A) of the Small Business  
 9        Act (15 U.S.C. 637(e)(3)(A)) and section  
 10       18(a)(3)(A) of the Office of Federal Procurement  
 11       Policy Act (41 U.S.C. 416(a)(3)(A)) shall not apply  
 12       and the period specified in section 8(e)(3)(B) of the  
 13       Small Business Act and section 18(a)(3)(B) of the  
 14       Office of Federal Procurement Policy Act for sub-  
 15       mission of bids or proposals shall begin to run from  
 16       the date the solicitation is electronically accessible.

17        “(2) When a notice and solicitation are made  
 18        accessible simultaneously and the wait period is  
 19        waived pursuant to paragraph (1), the deadline for  
 20        the submission of bids or proposals shall be not less  
 21        than 5 days greater than the minimum deadline set  
 22        forth in section 8(e)(3)(B) of the Small Business  
 23        Act (15 U.S.C. 637(e)(3)(B)) and section  
 24        18(a)(3)(B) of the Office of Federal Procurement  
 25        Policy Act (41 U.S.C. 416(a)(3)(B)).

1 “(f) IMPLEMENTATION.—

2 “(1) Nothing in this section shall be construed  
3 as modifying regulatory requirements set forth in  
4 the Federal Acquisition Regulation, except with re-  
5 spect to—

6 “(A) the applicable wait period between  
7 publication of notice of a proposed contract ac-  
8 tion and release of the solicitation; and

9 “(B) the deadline for submission of bids or  
10 proposals for procurements conducted in ac-  
11 cordance with the terms of this pilot program.

12 “(2) This section shall not apply to the extent  
13 the President determines it is inconsistent with any  
14 international agreement to which the United States  
15 is a party.

16 “(g) STUDY.—Within 18 months after the effective  
17 date of the program, NASA, in coordination with the  
18 Small Business Administration, the General Services Ad-  
19 ministration, and the Office of Management and Budget,  
20 shall evaluate the impact of the pilot program and submit  
21 to Congress a report that—

22 “(1) sets forth in detail the results of the test,  
23 including the impact on competition and small busi-  
24 ness participation; and

1           “(2) addresses whether the pilot program  
2           should be made permanent, continued as a test pro-  
3           gram, or allowed to expire.

4           “(h) REGULATIONS.—The Administrator shall pub-  
5           lish proposed revisions to the NASA Federal Acquisition  
6           Regulation Supplement necessary to implement this sec-  
7           tion in the Federal Register not later than 120 days after  
8           the date of enactment of the National Aeronautics and  
9           Space Administration Authorization Act of 2005. The Ad-  
10          ministrator shall—

11           “(1) make the proposed regulations available  
12           for public comment for a period of not less than 60  
13           days; and

14           “(2) publish final regulations in the Federal  
15           Register not later than 240 days after the date of  
16           enactment of that Act.

17           “(i) EFFECTIVE DATE.—

18           “(1) IN GENERAL.—The pilot program author-  
19           ized by this section shall take effect on the date  
20           specified in the final regulations promulgated pursu-  
21           ant to subsection (h)(2).

22           “(2) LIMITATION.—The date so specified shall  
23           be no less than 30 days after the date on which the  
24           final regulation is published.

1       “(j) EXPIRATION OF AUTHORITY.—The authority to  
 2       conduct the pilot program under subsection (a) and to  
 3       award contracts under such program shall expire 2 years  
 4       after the effective date established in the final regulations  
 5       published in the Federal Register under subsection  
 6       (h)(2).”.

7       **SEC. 607. REPORTS ELIMINATION.**

8       (a) REPEALS.—The following provisions of law are  
 9       repealed:

10           (1) Section 201 of the National Aeronautics  
 11           and Space Administration Authorization Act of 2000  
 12           (42 U.S.C. 2451 note).

13           (2) Section 304(d) of the Federal Aviation Ad-  
 14           ministration Research, Engineering, and Develop-  
 15           ment Authorization Act of 1992 (49 U.S.C. 47508  
 16           note).

17       (b) AMENDMENTS.—

18           (1) Section 315 of the National Aeronautics  
 19           and Space Administration Act of 1958 (42 U.S.C.  
 20           2459j) is amended by striking subsection (a) and re-  
 21           designating subsections (b) through (f) as sub-  
 22           sections (a) through (e).

23           (2) Section 315(a) of the National Aeronautics  
 24           and Space Administration Authorization Act, Fiscal  
 25           Year 1993 (42 U.S.C. 2487a(c)) is amended by

1 striking subsection (c) and redesignating subsection  
2 (d) as subsection (c).

3 (3) Section 323 of the National Aeronautics  
4 and Space Administration Authorization Act of 2000  
5 is amended by striking subsection (a).

6 **SEC. 608. SMALL BUSINESS CONTRACTING.**

7 (a) PLAN.—In consultation with the Small Business  
8 Administration, the Administrator shall develop a plan to  
9 maximize the number and amount of contracts awarded  
10 to small business concerns (within the meaning given that  
11 term in section 3 of the Small Business Act (15 U.S.C.  
12 632) and to meet established contracting goals for such  
13 concerns.

14 (b) PRIORITY.—The Administrator shall establish, as  
15 a priority, meeting the contracting goals developed in con-  
16 junction with the Small Business Administration to maxi-  
17 mize the amount of prime contracts, as measured in dol-  
18 lars, awarded in each fiscal year by NASA to small busi-  
19 ness concerns (within the meaning given that term in sec-  
20 tion 3 of the Small Business Act (15 U.S.C. 632)).

21 **SEC. 609. GOVERNMENT ACCOUNTABILITY OFFICE REVIEW**  
22 **AND REPORT.**

23 (a) REVIEW.—The Comptroller General of the United  
24 States shall conduct a review of NASA's policies, proc-  
25 esses, and procedures in the planning and management



1 of applications research and development implemented in  
 2 calendar years 2001 to 2005 within the Applied Sciences  
 3 Directorate and former Earth Science Applications Pro-  
 4 gram. A formal and transparent peer review process that  
 5 instills public and stakeholder confidence in NASA's spon-  
 6 sored applications research and development programs is  
 7 important and the process by which this program defines  
 8 requirements, scopes programs, selects peer reviewers,  
 9 manages the research competition, and selects proposals  
 10 is of concern. The review shall include—

11           (1) the program planning and analysis process  
 12           used to formulate applied science research and devel-  
 13           opment requirements, priorities, and solicitation  
 14           schedules, including changes to the process within  
 15           the period under review, and the effects of such  
 16           planning on the quality and clarity of applied  
 17           sciences research announcements;

18           (2) the peer review process including—

19                   (A) membership selection, determination of  
 20                   qualifications and use of NASA and non-NASA  
 21                   reviewers;

22                   (B) management of conflicts of interest,  
 23                   including reviewers funded by the program with  
 24                   a significant consulting or contractual relation-  
 25                   ship with NASA, and individuals who both re-

1 view proposals and participate in the submis-  
 2 sion of proposals under the same solicitation  
 3 announcement;

4 (C) compensation of non-NASA proposal  
 5 reviewers;

6 (3) the process for assigning or allocating ap-  
 7 plied research to NASA researchers and to non-  
 8 NASA researchers; and

9 (4) alternative models for NASA planning and  
 10 management of applied science and applications re-  
 11 search, including an evaluation of—

12 (A) the National Institutes of Health’s in-  
 13 tramural and extramural research program  
 14 structure, peer review process, management of  
 15 conflicts of interests, compensation of reviewers,  
 16 and the effects of compensation on reviewer ef-  
 17 ficiency and quality;

18 (B) the Department of Agriculture’s re-  
 19 search programs and structure, peer review  
 20 process, management of conflicts of interest,  
 21 compensation of reviewers, and the effects of  
 22 compensation on reviewer efficiency and quality;  
 23 and

1 (C) the “best practices” of both in the  
2 planning, selection, and management of applied  
3 sciences research and development.

4 (b) REPORT.—Not later than 1 year after the date  
5 of the enactment of this Act, the Comptroller General shall  
6 submit a report to the Senate Committee on Commerce,  
7 Science, and Transportation and the House of Represent-  
8 atives Committee on Science describing the results of the  
9 review conducted under subsection (a), including rec-  
10 ommendations for NASA best practices.

11 (c) IMPLEMENTATION.—Not later than 90 days after  
12 receipt of the report, NASA shall provide the Senate Com-  
13 mittee on Commerce, Science, and Transportation and the  
14 House of Representatives Committee on Science a plan de-  
15 scribing the implementation of those recommendations.

Passed the Senate September 28, 2005.

Attest:

*Secretary.*

109TH CONGRESS  
1ST Session  
**S. 1281**

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## **AN ACT**

To authorize appropriations for the National Aeronautics and Space Administration for science, aeronautics, exploration, exploration capabilities, and the Inspector General, and for other purposes, for fiscal years 2006, 2007, 2008, 2009, and 2010.